

REMARKS

Claims 1, 3-7, 9-11, 18, 20-32, and 43 are pending herein.

1. Claims 1, 9-11, and 26-28 were rejected under 35 U.S.C. 103(a) as being unpatentable over JP 1-107582 (Haraichi) in view of US 2004/0266628 A1 (Lee). This rejection is respectfully traversed for the following reasons.

The claimed invention (claim 1) is directed to a superconducting article having a substrate and a layer of superconductor material overlying the substrate. The substrate has a length of at least about 100 meters and a dimension ratio of not less than about 10. The layer of superconductor material includes a plurality of superconductive bridges electrically connecting at least a first, a second, and a third superconductive strips. At least one superconductive bridge is present per 10 meters of length of the substrate. That is, the layer of superconductor material includes at least ten bridges for the claimed at least 100 meter substrate. Further, claim 18 has the additional requirement that at least one superconductive bridge is present per 1 meter of length of the substrate. That is, the layer of superconductor material includes at least 100 bridges for the claimed at least 100 meter substrate.

Applicants have discovered that the combination of a plurality of strips extending parallel to each other along the length combined with a plurality of superconductive bridges between superconductive strips and spaced apart along the length of the substrate improves electrical performance and improves the processing yield for long length superconductive tapes. Such advantages are especially important in the context of long length superconductors for use in generators, transformers, and power transmission lines.

Turning to the cited prior art, Haraichi teaches components of a superconducting circuitry. Two superconductive "strips" are connected by a Josephson Junction (see FIGs. 3 and 4) or a switching circuit (see FIGs 5 and 6). Generally, Josephson Junctions are useful in high-speed circuits due to short switching times (on the order of a few picoseconds) and low power dissipation. Since Haraichi is drawn to a discrete electrical component, the PTO relies upon Lee for a long length superconductor for electrical transmission.

Foremost, Applicants respectfully submit that one of ordinary skill in the art would not combine the superconducting circuitry of Haraichi with the long length superconductor of Lee, essentially resulting in a minimum 100 meters long, narrow superconducting circuitry. That is, in order to meet all features of the claimed invention, the Josephson Junction structure of Haraichi would have to be repeated at least 10 times over a minimum 100 meter length of tape (claim 1) and at least 100 times over a minimum 100 meter length of tape (claim 18). Clearly, the art does not teach or suggest repetition of Josephson Junctions, and certainly not converting a single, discrete Josephson Junction to a 100 meter tape. Further, Haraichi and Lee, alone or in combination, fail to teach or suggest electrically connecting the first, second, and third superconducting strips with superconducting bridges between the first and second superconducting and second and third superconducting strips.

For at least the forgoing reasons, Applicants respectfully submit that the presently claimed invention would not have been unpatentable over Haraichi and Lee. Accordingly, withdrawal of the Section 103 rejections over Haraichi and Lee is respectfully requested.

2. Claims 3-7, 12, 14-18, 20-25, and 29-32 were rejected under 35 U.S.C. 103(a) as being unpatentable over JP 1-107582 (Haraichi) in view of US 2004/0266628 A1 (Lee) and further in view of US 5,077,266 (Takagi). This rejection is respectfully traversed for the following reasons.

As discussed above Haraichi and Lee fail to teach or suggest a substrate with a length of at least about 100 meters and a dimension ratio of not less than about 10, and a plurality of superconductive bridges spaced at least one per 10 meters along the length of the substrate and electrically connecting the first, second, and third superconductor strips. Takagi fails to overcome the deficiencies of Haraichi and Lee. As such, Haraichi, Lee, and Takagi, alone or in combination, fail to teach or suggest a plurality of superconductive bridges electrically connecting the first, second, and third superconductor, spanning the first and second gaps, and spaced at least one per ten meters along the length of the substrate, the substrate having a length of at least about 100 meters and a dimension ratio of not less than about 10.

For at least the forgoing reasons, Applicants respectfully submit that the presently claimed invention would not have been unpatentable over Haraichi, Lee, and Takagi.

Accordingly, withdrawal of the Section 103 rejections over Haraichi, Lee, and Takagi is respectfully requested.

Applicants respectfully submit that the present application is now in condition for allowance. Accordingly, the Examiner is requested to issue a Notice of Allowance for all pending claims.

Should the Examiner deem that any further action by the Applicants would be desirable for placing this application in even better condition for issue, the Examiner is requested to contact Applicants' undersigned attorney at the number listed below.

The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 50-3797.

11/5/07
Date

Respectfully submitted,

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